



The Impact of Social Media on Body Image Perceptions and Bodily Practices among Gay, Bisexual, and Other Men Who Have Sex with Men: A Critical Review of the Literature and Extension of Theory

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Abstract

Recent evidence indicates that interactive media-based web technologies, such as social networking sites, have an appreciable effect on users' perceptions of and attitudes toward their own bodies, as well as resultant weight and shape control behaviours. However, little research has been done to investigate whether social media differentially influence gay, bisexual, and other men who have sex with men, who are known to be at increased risk of body image disorders compared to their heterosexual counterparts. The current paper aims to address this gap by surveying and extending existing theory, using a critical review methodology, to derive a provisional theoretical model that explains how social media influence body image and weight and shape control behaviours of sexual minority men in particular. Our proposed model serves as an extension to the transactional model of social media and body image concerns, which includes additions to individual vulnerability factors (perceived self-discrepancy, gender nonconformity, minority stress) and psychosocial mediating processes (sexual objectification, sociocultural processes, online disinhibition). We conclude by identifying gaps in empirical evidence that would lend support to our proposed pathways as well as additional directions for future research.

Keywords Gay · Bisexual · Sexuality · Social media · Body image

A growing body of literature suggests that interactive media-based web technologies, such as social networking sites, have a measurable impact on users' perceptions of and attitudes toward their own bodies, as well as resultant weight and shape control behaviours (Holland and Tiggemann 2016; Mingoia et al. 2017). Thus far, however, most research has focused on girls and young, heterosexual White women, and little work has been done to understand how social media influence other populations. Our focus is on extending pre-existing theory to elucidate how social media may differentially impact gay, bisexual, and other men who have sex with men (GBMSM) who are at risk of body image-related issues.

Body Image among GBMSM

Until the early 1990s, research on body image perceptions and bodily practices focused predominantly on women, who are disproportionately at risk for body image disorders when compared to men (Bordo 1993; Furnham et al. 2002; Muth and Cash 1997). For the most part, this research was based on samples overwhelmingly comprised of heterosexual women and/or did not collect any data pertaining to sexual orientation. More recent work focusing on men has shown that GBMSM display risk levels that not only exceed those among heterosexual men, but approach levels observed among women (Conner et al. 2004; Morrison et al. 2004).

Studies assessing aggregate disordered eating symptoms have found that sexual minority men and women (i.e., those who identify as gay, lesbian, bisexual, two-spirit, queer or otherwise not heterosexual) report greater levels of eating disorder symptomatology than their heterosexual counterparts, although disparities across men are more consistent (Calzo et al. 2017). Purging behaviour (e.g., self-induced vomiting or laxative misuse for the purpose of weight loss) is reported 3

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to 16 times more frequently by GBMSM than by heterosexual men (Matthews-Ewald et al. 2014; Watson et al. 2017). GBMSM are also more likely to report fasting (i.e., not eating for extended periods of time) (Watson et al. 2017), dieting to lose weight (Matthews-Ewald et al. 2014), and using diet pills for weight loss (Austin et al. 2013; Matthews-Ewald et al. 2014; Watson et al. 2017) than heterosexual men, but findings concerning disparities in the use of dietary supplements (e.g., creatine) or drugs (e.g., anabolic steroids) for muscle building are inconclusive. In one study, sexual minority male adolescents were found to be 5.8 times more likely than their heterosexual counterparts to report lifetime anabolic steroid misuse (Blashill and Safren 2014), whereas another study found no statistically significant association (Calzo et al. 2016). Moreover, rates of disordered weight and shape behaviours may be especially elevated among GBMSM who are racial/ethnic minorities. Survey data from high school students revealed that 41.9% of 51 African-American bisexual male adolescents reported diet pill use compared to 11.4% of 76 White bisexual male adolescents (Austin et al. 2013).

Use of Social Media

Exposure to commercial mass media, such as broadcast television, magazines, and internet-based advertising, is linked to body dissatisfaction and disordered eating (for meta-analyses, see Grabe et al. 2008; Groesz et al. 2002; Levine and Murnen 2009; Want 2009). However, empirical and theoretical research has been slow to adapt to the changes ushered by user-generated interactive web technologies. Global media consumption through television, radio, newspapers and magazines has decreased markedly since 2010, whereas mobile internet use in particular has skyrocketed from 9.8 min per day in 2010 to a forecasted 112.9 min per day in 2018 (Austin et al. 2016). According to data obtained from a nationally representative sample, a majority of U.S. adults now use social networking sites, with 73% and 68% reporting at least some use of YouTube and Facebook, respectively. Most (94%) individuals ages 18–24 years-old report some form of social media use, and a majority of users for several platforms (e.g., Facebook, Snapchat, Instagram) visit the site at least once daily (Smith and Anderson 2018). Indeed, GBMSM may use social media to an even greater extent than the general population. Although data describing patterns in 2SLGBTQ+ (Two-spirit, lesbian, gay, bisexual, trans, queer, and other diverse sexual and gender identities) populations' media engagement are scant, one study has found that compared with heterosexual respondents, a greater proportion of lesbians, gay men, and bisexuals reported having a social networking account (Seidenberg et al. 2017).

GBMSM display unique patterns and motivations for social media use that stem from their collective history of

cultural marginalization and systemic persecution. Many use geosocial networking (GSN) apps, which employ global positioning system technology to connect users based on physical proximity for chat, dating, or sex (Grosskopf et al. 2014). Like the “handkerchief code” used by pre-digital era gay men to locate casual sex partners, GSN apps allow users to communicate their sexual or romantic interests to potential partners while minimizing their risk of experiencing homophobic harassment or violence (Gudelunas 2012). Several of these apps have been developed to target specific sub-communities, identities, and sexual interests among GBMSM, including Grindr, Jack'd, Scruff (for men attracted to facial and body hair), GROWLr (for the “bear” community), and Recon (for the “leather” and general fetish community) (Groves et al. 2014). GSN app use is remarkably widespread among GBMSM; a recent study of 3105 MSM (men seeking sex with men) from diverse ethno-racial and socioeconomic backgrounds revealed that 78.2% of the sample reported some or frequent use of general dating websites and apps. The most frequently used app was Grindr, with 60.2% of participants reporting some or frequent use, followed by Adam4Adam (44.1%), Jack'd (35.6%), and Scruff (34.3%) (Badal et al. 2018).

Current Gaps in the Literature

Despite social media's pervasiveness and central role in the social activity of GBMSM in particular, little research has been done to investigate their impact on body image disturbance and other adverse health outcomes that disproportionately affect this population. A small but growing body of research has focused on social media's association with HIV-risk behaviours (Goedel and Duncan 2016; Landovitz et al. 2013), intimate partner violence, and substance abuse (Duncan et al. 2016) among GBMSM. In contrast, we only identified one study that investigated the links among social media, body image, and weight and shape control behaviours in GBMSM (Griffiths et al. 2018).

In the current paper, we aim to address this gap by surveying and extending existing theory, using a critical review methodology, to derive a provisional model detailing the impact of GSN apps (and social media more broadly) on body image-related outcomes and applying specifically to GBMSM. To that end, we seek to answer the following questions: What pre-existing theories, models, and frameworks may be used to explain the influence of social media on body image and weight and shape control behaviours among GBMSM? How do the aforementioned theories, models, and frameworks conceptually relate to one another, and how may they be integrated into a single, comprehensive theoretical model? Individually and as constitutive elements of a broader, integrative framework, how well do the

aforementioned theories, models, and frameworks conform to and explain the existing empirical evidence base?

Class I Theories—Body Image Disturbance Etiology

Self-Discrepancy and Escape Theory

Self-discrepancy theory proposes that a range of adverse psychological outcomes result from the interactions between various representations of self. Its main premise is that the self is divided into several distinct domains. These include (a) the actual self, which reflects an individual's perception of their own characteristics and does not necessarily correspond to any objective measures; (b) the ideal self, or a series of attributes an individual aspires to possess or embody; and (c) the ought self, or a series of attributes an individual feels obligated to possess. Actual, ideal and ought selves can be defined either from one's own perspective or from the perspective of others (Higgins 1989). Subsequent revisions to Higgins' (1989) original theory have included additional domains of the self, such as future selves (individuals' perceptions of what they might be) (Hoyle and Sherrill 2006) and feared selves (attributes individuals wish not to possess but fear they might) (Carver et al. 1999; Markus and Nurius 1986). It is thought that perceiving a discrepancy or incongruence between one's actual, ideal, and ought selves results in various emotional outcomes depending on how the selves interact with one another. Perceiving a discrepancy between one's actual and ideal selves elicits feelings of dejection, such as dissatisfaction and depression. A perceived discrepancy between one's actual and ought selves, on the other hand, may yield agitation-related emotions, such as anxiety and guilt (Vartanian 2012).

Self-discrepancy theory is relevant in the context of body image because ideal selves are in large part prescribed by cultural norms that define standards of physical attractiveness. Body-related self-discrepancies occur when one feels that they fail to embody those standards that are unrealistic by design. Theorists postulate these perceived discrepancies, and the emotions they arouse, motivate individuals to engage in behaviours they believe will reduce the discrepancy, including weight and shape control behaviours for body-related self-discrepancies (Vartanian 2012). Heatherton and Baumeister (1991) expound on this notion with escape theory, which posits that when individuals are faced with an aversive self-awareness, such as an awareness of a discrepancy between one's actual and ideal body shape, they will engage in behaviours that help them cope and/or escape this awareness (e.g., drug use, self-harm). In this sense, disordered eating sometimes serves as an affect-regulation strategy.

Numerous studies, mostly conducted with women, have verified many predictions made by self-discrepancy theory

concerning body image. Higgins' (1989) contention that perceived self-discrepancies result in mental health issues is well supported by the literature: Those with a greater disparity between their perceived actual and ideal body shapes report greater levels of depressive symptoms (Jackson et al. 2014; Solomon-Krakus et al. 2017). Further, because many researchers operationalize body dissatisfaction as the difference between how someone sees themselves and how they would like to look, body dissatisfaction may be understood as a result of perceived actual-ideal self-discrepancy (Vartanian 2012). Indeed, it has been shown that those with high appearance self-discrepancy report greater body dissatisfaction and lower global self-esteem (Jung et al. 2001). The notion that perceived discrepancies culminate in maladaptive weight and shape control behaviours, such as eating pathologies, has also received support. A review of the literature found that differences between current and ideal figures are greater among those with disordered eating symptoms, and individuals with attitudes and beliefs characteristic of anorexia nervosa and bulimia nervosa are more likely to report a lower ideal body mass (Lantz et al. 2018).

In addition to providing a useful framework for understanding the psychological processes underpinning body image disturbance and disordered weight and shape control behaviours, the constructs of self-discrepancy theory imply that standards of attractiveness are not fixed, rather that body dissatisfaction is determined in relation to standards that vary historically, cross-culturally, and individually (Vartanian 2012). This variability presents the possibility that trends in ideal and ought selves vis-à-vis physical appearance vary based on sociodemographic characteristics such as gender and sexual orientation and that gender- and sexual orientation-based disparities in body image disturbance and disordered weight and shape control behaviours reflect differences in ideal and ought selves. For example, as will be demonstrated later, men uniquely display a desire to be muscular, but this is not equally prevalent among heterosexual men and GBMSM.

Social Comparison Theory

Social comparison theory aims to explain how individuals process social information and develop a sense of self. In his original explication of the framework, Festinger (1954) argued that individuals accomplish this feat by comparing themselves to others in order to establish similarities and differences. He outlined the theory's basic tenets through a number of hypotheses, of which the following may be considered relevant in the context of the current research problem. (a) Humans have an innate motivation to evaluate their own opinions and abilities and, whenever possible, do so using objective criteria (i.e., based on a self-evident, physical referent, like comparing strength by seeing whether one can lift a rock of a

particular weight). (b) To the extent that objective means are unavailable, individuals evaluate their attributes by comparing themselves to others. (c) The inclination to compare oneself to others decreases as the gap between their opinions and abilities widens. (d) There is a unidirectional drive to improve, rather than worsen, one's abilities. (e) The pressure toward achieving traits consistent with a target group is greater if the target group appears more attractive, their opinion is perceived as more relevant, or they are similar with regard to other attributes.

The initial framework has undergone several modifications. One of the most noteworthy is the inclusion of motivations that underpin social comparison, which are thought to shape both how individuals engage in social comparison and how this process influences psychosocial outcomes. Those individuals who are primarily invested in self-evaluation, for instance, seek to acquire what they perceived to be accurate, unbiased information about themselves. Others engage in social comparison for the purpose of self-improvement, where the goal is to learn how to improve certain characteristics or solve personal problems. Some, counter to Festinger's claim that people are interested in accurate self-evaluation, are interested in self-enhancement, or using information in potentially biased ways to protect or enhance one's self-esteem (Wood 1989). Experimental evidence shows self-evaluation is associated with negative outcomes for appearance satisfaction and self-esteem, whereas self-improvement and self-enhancement are associated with at least short-term positive outcomes (Martin and Gentry 1997).

Social comparison has also been categorized more discretely into downward and upward comparison. Wills (1981) states that individuals partake in downward comparison when they compare themselves to an individual or group they consider to be in worse condition than themselves to enhance their subjective well-being. Downward comparison is evoked by situational decreases in subjective well-being, and therefore it occurs more frequently among individuals with low self-esteem. Upward comparison occurs more often and involves comparing oneself to others who are better off. Its focus seems to be less on self-enhancement and more on self-evaluation (Wilson and Benner 1971). It has been experimentally demonstrated that downward comparison with others who are said to be experiencing hardship improves mood of individuals with low self-esteem, whereas the opposite occurs in the case of upward comparison (Gibbons and Gerrard 1989).

Some of the theory's original premises have been challenged in light of contradicting evidence. Rather than being an inert medium that merely enables individuals of their own volition to engage in social comparison, many argue the external environment should be understood as, to some extent, imposing comparisons on individuals. The suggestion that the social environment in fact shapes self-evaluation is grounded in studies like Davis' (1966) work, which found that college

graduates' career aspirations were predicted by their relative standing among peers. Evidence also indicates that people are inclined to make comparisons with those who differ markedly from themselves. Studies of undergraduate women show they compare themselves to unrealistically thin depictions of women in media as frequently as they do to their more relevant peers (Engeln-Maddox 2005; Strahan et al. 2006).

Contradictory evidence that informed modifications to the original framework are accompanied by a wealth of confirmatory evidence that justifies the framework's continued use. Although it appears that individuals often are no more interested in making comparisons with similar others, Festinger was correct in that those comparisons are especially impactful. For example, a series of studies by Tesser and colleagues (see Tesser 1986, for a review) demonstrate that comparisons drawn between individuals who are similar based on factors such as age, race, gender, and personality have a greater impact on self-esteem. Meta-analysis also confirms that individuals who engage in social comparisons display higher levels of body dissatisfaction (Myers and Crowther 2009).

The aforementioned theoretical revisions that emphasize the importance of environment in determining when and how social comparisons take place offer important implications for how social media and other information technologies influence body image. Based on a wealth of evidence demonstrating that social comparisons mediate the relationship between social networking site (SNS) use and body image issues (Fardouly et al. 2015; Fardouly and Vartanian 2015; Lewallen and Behm-Morawitz 2016), we are inclined to suggest that the digital spaces formed by social media platforms and their communities of users create unique environments that facilitate social comparison.

Objectification Theory

Objectification theory was originally proposed to explain how sociocultural and intrapsychic factors result in disproportionately high rates of disordered eating and other mental health issues among women. Fredrickson and Roberts (1997, p. 175) defined sexual objectification as occurring when "women are treated *as bodies*—and in particular, as bodies that exist for the use and pleasure of others" [emphasis in original]. Nussbaum (1995) identified a series of characteristic attitudes regarding objects that, when applied to persons, constitute objectification. These include instrumentality (treating others as tools to achieve one's own ends), denial of autonomy (treating others as lacking self-determination), fungibility (treating one as being interchangeable with others), and violability (treating others as being permissible to break into). In essence, sexual objectification is the fragmentation and reduction of women's personhood into their sexual utility. By normalizing both the sexual gaze and violence toward women, it

is understood as a quotidian mechanism by which women's oppression in Western society is maintained.

Because women are socialized into the dominant cultural milieu, it is suggested that they begin to internalize sexual objectification. Self-objectification occurs when women adopt observers' perspectives of the self and displace their own. It often manifests in the form of reducing one's worth to how closely their appearance adheres to normative cis-heteropatriarchal standards of beauty. Self-objectification is accompanied by self-surveillance, or habitual monitoring of the body's external appearance (Fredrickson and Roberts 1997). The co-occurrence of self-objectification and self-surveillance is thought to result in body shame, appearance anxiety, and reduced awareness of internal physiological and psychological states (i.e., deficits in interoceptive awareness of hunger, satiety, fatigue, and anxiety). Reduced awareness of bodily cues, in concert with shame and anxiety that encourages women to suppress these cues, may ultimately lend to an increased risk of disordered eating (Calogero 2012; Fredrickson and Roberts 1997). Empirical evidence indicates the aforementioned constructs are highly interrelated (Augustus-Horvath and Tylka 2009; Greenleaf 2005; Kozee and Tylka 2006; McKinley and Hyde 1996; Moradi et al. 2005; Noll and Fredrickson 1998).

Although the original authors do not suggest that experiencing sexual objectification is unique to women, the framework was developed to understand how women's lived experiences in particular are shaped. Indeed, this specificity is reflected in the fact that a majority of studies testing the model's viability rely on convenience samples of mostly White women age 18–24 (Augustus-Horvath and Tylka 2009). The relatively fewer studies conducted among men suggest that although the model holds overall (Martins et al. 2007; Wiseman and Moradi 2010), the degree of significance among its various proposed interrelations (e.g., among sexual objectification, self-surveillance, body shame, interoceptive deficits, and disordered eating) may vary across gender and sexual orientation. For instance, a meta-analysis of 53 cross-sectional studies demonstrated a positive correlation between self-objectification and disordered eating (overall effect size $r = .39$), but the large degree of heterogeneity between studies in effect size suggests the presence of potential mediating factors. Overall, the association between self-objectification was found to be stronger among women ($r = .41$ across 63 effect sizes) than men ($r = .20$ across ten effect sizes). Significant differences were observed in the point estimates for heterosexual women ($r = .39$), lesbian women ($r = .38$), gay men ($r = .32$), and heterosexual men ($r = .23$), suggesting that sexual orientation modifies the association between self-objectification and disordered eating (Schaefer and Thompson 2018). Differences in association strength may be due, in part, to slightly different pathway effects. For instance, one study found that although body surveillance in gay men predicted

body shame and in turn disordered eating, experiences of sexual objectification did not predict body surveillance or body shame (Engeln-Maddox et al. 2011).

Some of the assumptions that may be drawn from the original objectification theory concerning gender and sexual orientation appear to conflict with the evidence base. Objectification theory posits that the interpersonal and structural oppression of women inculcates a social milieu that more readily sanctions sexual objectification of women by men rather than vice-versa. A corollary of this notion is that men, irrespective of their sexual orientation, would experience significantly less objectification. Based on this premise, one may assume that body image concerns do not differ between heterosexual men and GBMSM. As we previously demonstrated, however, sexual orientation-based disparities between men in body image disturbance and disordered eating are consistently observed. The previous evidence suggests that even if, to some extent, objectification theory can be applied ad hoc to GBMSM, based on its current premises it cannot solely account for their disproportionately high rates of body image disturbance and disordered eating.

Class II Theories—Sexual Orientation-Based Differences in Body Image

A scoping review of empirical studies addressing disordered eating among sexual minorities identified two prevailing theoretical models that account for sexual orientation-based disparities in eating disorder risk: sociocultural and minority stress approaches (Calzo et al. 2017). Although all surveyed epidemiologic surveillance studies were framed by sociocultural approaches, minority stress approaches, or an integrative combination of the two, few formally tested these proposed mechanisms through analytic methods. Before we introduce these proper, we will detail one theory that illustrates how established models can be modified to include additional demographics. This theory may be viewed as a logical extension of objectification theory, allowing it to accommodate within its theoretical assumptions that GBMSM are acutely vulnerable to being objectified.

Perils of Sexual Objectification Hypothesis

Prior to sexual objectification theory being formalized, Hatfield and Sprecher (1986) argued the increased emphasis on physical attractiveness among both heterosexual women and gay men was due to the fact that both groups are interested in attracting men. The perils of sexual objectification hypothesis, articulated and tested by Siever (1994), posits that the similar vulnerability to body dissatisfaction and disordered eating seen among heterosexual women and gay men is attributable to their shared experience of being sexual objectified by

men. It follows from this idea that lesbians and heterosexual men, who in theory have minimal investment in attracting men, should display comparatively less concern in appearing physically attractive and concomitantly have lower rates of body image disturbance and disordered eating.

Findings from Siever's (1994) analysis of college students appear to support the hypothesis. Based on multiple measures, lesbians placed less importance on physical attractiveness than do heterosexual men and women as well as gay men. On average, heterosexual women and gay men indicated higher body dissatisfaction than lesbians and heterosexual men, respectively. Similar trends were observed for measures of disordered eating, with heterosexual men displaying the lowest overall group means. Heterosexual women and gay men displayed similar scores, and lesbians displayed significantly lower means than heterosexual women on most measures.

More recent evidence offers mixed support of this hypothesis. An analysis of 2206 U.S. undergraduate students confirmed that it is indeed men who are primarily responsible for perpetuating the male gaze and interpersonal objectification, evidenced by a greater proportion of women than men (43% of 1303 women vs. 25% of 903 men) reporting high appearance surveillance (Frederick et al. 2007). In addition to women being more likely than men to self-objectify, an additional study found that men objectified women more frequently than women objectified men (Strellan and Hargreaves 2005). Conversely, another study found that heterosexual women were no more likely than lesbians were to report having experienced a sexualized gaze or interpersonal sexual objectification, nor did the relationship between interpersonal sexual objectification and self-objectification differ between lesbians and heterosexual women (Hill and Fischer 2008). Engeln-Maddox et al.'s (2011) previously mentioned findings that interpersonal objectification does not predict surveillance or body shame in gay men also contradicts the notion that it is the *experience* of objectification *by* men that results in disordered eating.

Equivocal test results notwithstanding, the perils of sexual objectification hypothesis serves as a useful conceptual extension of objectification theory because it may be used to explain why an association between self-objectification and disordered eating is observed among GBMSM, even though objectification theory's initial premise implies it is women in particular who are impacted. The theory involves a rhetorical shift from viewing sexual objectification as something that is *experienced by* women to something that is *perpetuated by* men. In so doing, it renders intelligible the possibility that men objectify men.

Sociocultural Models

Sociocultural approaches include a range of theoretical models that seek to explain the higher rates of body image

disturbance and disordered eating among GBMSM and that are not fully captured by objectification frameworks. Generally, they posit that the aforementioned disparities are a result of community-specific norms revolving around ideal appearance or the importance placed on physical appearance (Calzo et al. 2017). It has been long observed that specific gay subcultures impose unique pressures on GBMSM to be physically attractive (Clark 1977; Millman 1980). Signorile (1997, p. 28) is credited with first using the phrase "body fascism" to describe the state of hegemonic gay male subcultures. He contends that although there are many different gay communities, there exists a diffuse body-focused subculture that has permeated mainstream gay discourse, iconography, and institutions. This influential culture is perpetuated mostly by young, White, metropolitan gay men who venerate muscular mesomorphic bodies (lean and muscular) while denigrating larger bodies. These norms are perpetuated, in spite of a dearth of individuals who actually embody the ideal, through both representations in commercial marketing and interpersonal interaction.

Based on this model, one would expect that integration into the community or affiliation with other GBMSM affects body image. Indeed, it has been shown that those who feel greater belonging to the gay community experience, perhaps counter-intuitively, both greater self-esteem ($r = .59$) and body image disturbance ($r = .36$). The association between self-esteem and body image dissatisfaction, such that those with higher self-esteem were less satisfied with their bodies, was found to be significant only among those who reported average-to-high community integration (Kousari-Rad and McLaren 2013).

The question remains: What is happening within these communities to cause individuals to feel worse about their bodies? One study found that a greater proportion of gay men report experiencing peer pressure regarding physical appearance (determined by the extent to which individuals feel their peers value beauty, slenderness, muscularity, and the like) than their heterosexual counterparts (32.93% of 70 gay men vs. 27.96% of 169 heterosexual men, $p < .001$). Interestingly, peer pressure was found to be negatively correlated with self-esteem ($r = -.30$) and positively correlated with disordered eating symptomatology ($r = .31$) among gay men but not among heterosexual men. Peer pressure was associated with body dissatisfaction for heterosexual men, but to a lesser extent than for gay men ($r_s = .49$ and $.17$, respectively) (Hospers and Jansen 2005). Another study noted that gay men more frequently reported weight-related teasing by peers and same-sex peer influence than heterosexual men did. Hierarchical moderated regression analysis revealed the association between weight-related peer teasing and self-esteem was greater for gay men. However, the same study also found that sexual orientation did not moderate the relationship between body dissatisfaction and peer-teasing or same-sex peer influence (McArdle and Hill 2009). Similarly, Yelland and

Tiggemann (2003) found that gay men, more so than heterosexual men, believed their appearance was important to other people. Self-esteem was also found to be negatively correlated with the perceived importance others place on appearance, weight, and muscularity for gay men but not for heterosexual men and women.

Additional research suggests gay men's concerns of being judged based on their appearance are not unfounded. Compared to heterosexual men, gay men report more frequently engaging in appearance conversations, defined as discourse that reinforces hegemonic appearance ideals in society (e.g., "Your arms look huge!" or "You look fat"). Further, the relationship between sexual orientation and body dissatisfaction was mediated by the frequency of appearance conversations, suggesting that sexual orientation-based disparities in body image disturbance are attributable, at least in part, to community-specific social and cultural influences (Jankowski et al. 2014). Overall, evidence indicates that gay men more frequently feel judged by their peers based on their appearance and that these interactions significantly impact their self-esteem and body image. Additionally, recent research links sociocultural models with objectification theory by investigating the possibility that community involvement exposes gay men to more experiences of sexual objectification. Pathway and bootstrap analyses revealed that sexual objectification experiences positively mediated the relationship between behavioural participation in 2SLGBTQ+ spaces and communities and body dissatisfaction. In contrast to studies previously mentioned, community involvement and psychological sense of community were not significantly associated with body dissatisfaction, suggesting that experiences of objectification may be a primary mechanism through which community norms precipitate body image disturbances (Davids et al. 2015).

Recent discussions of gay men's tendency to obfuscate appearance- and identity-based stigma on GSN apps under the phraseology of "sexual preferences" lend support to the idea that peer pressure and appearance stigma are especially salient among GBMSM, as well as offers a compelling example of how cultural norms and sexual objectification intersect. Several popular articles depict an epidemic of discriminatory behaviour on Grindr and other GSN apps targeted against persons with larger bodies, People of Colour, trans and gender-nonconforming persons, persons with disabilities, persons who are HIV-positive, and other marginalized embodiments and identities (Arkee 2018; Hudson 2018; Richardson 2018). The phrase "no fats, no fems, no Asians," a common refrain of numerous permutations seen in users' profile descriptions that delineates the features one deems automatically disqualifying from interaction, is now used as shorthand to refer to this phenomenon. As these same articles note, an oft-used rejoinder to accusations of exclusionary or discriminatory behaviour is that one is within their right to exclude

those whose traits do not conform to their "sexual preferences"—the tacit assumption being that these preferences are natural and immutable and exist independent of cultural bias or ideology. However, using Collins' (2004, p. 38) framework of the "new racism," or the reconfiguration of historical prejudices into more palatable forms to justify the continued social exclusion of People of Colour, Robinson (2015) argues discourses of personal preference in gay-oriented online spaces serve to efface larger cultural assumptions of race that shape psychic desires. Moreover, the logic of "preference" is said to be predicated on objectification—to value individuals based on discrete features like race, body type, and gender expression requires first reducing the whole person to the sum of their parts for the purposes of sexual gratification.

The notion that preference discourses are often deployed in online spaces (Callander et al. 2016; Smith 2017) also underscores how cultural norms are negotiated through internet-mediated communication. It should follow from the basic premises of sociocultural theory that exposure by GBMSM to the mediums that perpetuate these norms, such as mass and social media, would be associated with body image disturbance and its sequelae. A comparatively smaller body of literature confirms that the association between mass media exposure, body dissatisfaction, and disordered eating observed among heterosexual women is also applicable to GBMSM. Duggan and McCreary (2004) found that greater exposure to pornography, as well as consumption of muscle and fitness magazines, is associated with social physique anxiety in gay men but not in heterosexual men. Similarly, Carper and colleagues (Carper et al. 2010) demonstrated that the relation between perceived media influence and beliefs regarding the importance of physical attractiveness was moderated by sexual orientation such that this relationship was significant for gay men but not for heterosexual men.

It is evident that mass media uniquely influences GBMSM's body image, potentially via mechanisms proposed in sociocultural models. However, with the exception of a few studies (addressed hereinafter), little research addresses the specific impact of social media on GBMSM's body image. This is an obvious gap in the literature because social media and other web technologies permit certain discourses to proliferate among communities in much the same way as mass media. At the same time, key differences in how users interact with mass and social media present the possibility that cultural norms influence users' bodily perceptions via different mechanisms. For instance, Rutledge et al. (2013) found no link between overall time spent on Facebook and appearance-oriented attitudes, suggesting social media's adverse effects do not operate exclusively, or even predominantly, through passive consumption.

In an effort to shift focus away from overall social media use and identify specific social media-related behaviours that promote body image issues, Smith et al. (2013) found a

tendency to seek negative evaluations through Facebook was associated with eating pathologies. Hummel and Smith (2014) similarly found that Facebook users who wrote their statuses in a negative feedback-seeking style (e.g., “I feel so fat in this outfit”) were more likely to report weight and shape concerns. One of the key distinctions between how mass and social media perpetuate appearance discourses may thus lie in the fact that, unlike mass media, the user-generated element of social media means that individuals can share representations of themselves (through display pictures and status updates, for example) and be subjected directly to appearance evaluations from peers, family, and potential sexual/romantic partners through comments, likes, private messages, etc.

Minority Stress Models

Minority stress models frame body image disturbance as a product of psychological and developmental, rather than purely social, determinants. Meyer (2003) first proposed the minority stress framework to mechanistically explain the disproportionately high rates of mental health issues seen among lesbians, gay men, and bisexuals, including mood, anxiety, and substance use disorders. Stress is broadly defined as physical, mental, or emotional strain, manifested either internally or through external events, which as it accumulates bears a greater load on individuals’ adaptive mechanisms. Minority stress, by extension, can be operationally defined as “the excess stress to which individuals from stigmatized social categories are exposed as a result of their social, often a minority, position” (Meyer 2003, p. 675). In other words, minority stress is an increase in allostatic load that stems from the quotidian experience of being culturally, economically, and institutionally marginalized, oppressed, and/or disenfranchised.

Some commonly agreed upon features of minority stress are that it is (a) unique, in that it exists separate from general stressors that dominant social groups experience; (b) chronic, in that it is reinforced by stable social structures; and (c) socially-based, in that it originates from external social processes, institutions and structures. Three processes of minority stress that specifically affect 2SLGBTQ+ populations, ranked from distal to proximal, include (a) external, objective stressful events; (b) expectations of those events and the vigilance they necessitate; and (c) internalization of stigma and prejudice (e.g., homophobia, racism and transphobia) (Meyer 1995). Individual minority stressors accumulate and accompany general stressors (e.g., job loss, death of a spouse), which in turn influence mental health outcomes. The impact of minority stressors on mental health outcomes is moderated by characteristics of one’s minority identity, including the primacy it bears in defining one’s identity and the extent to which one integrates into communities of similarly marginalized members.

A growing body of literature supports the claim that minority stressors are related to adverse mental health outcomes. Experiences of discrimination, vigilance that accompanies disclosing one’s sexuality, and internalized homophobia, all of which may be conceptualized as distal or proximal minority stressors, were associated with depressive symptomatology, anxiety, substance use, and suicide ideation (Díaz et al. 2001; Hatzenbuehler et al. 2008; Mays and Cochran 2001; Rosario et al. 1996; Waldo 1999). Demonstrating a link between minority stressors and body image disturbance and its sequelae, on the other hand, presents a different challenge. This can be accomplished either (a) indirectly, by showing that mental health issues that are induced by minority stressors are associated with body image disturbance, or (b) directly, by demonstrating an association between specific minority stressors and body image disturbance. The former is supported through recent evidence confirming an association between body image disturbance and self-esteem (Grossbard et al. 2008), depressive symptoms (Ali et al. 2010; Richard, Rohmann, Lohse, & Eichholzer, 2016), and suicidal ideation (Lee and Lee 2016). The directionality of this association, however, has yet to be ascertained (i.e., whether mental health issues cause body image disturbance or vice-versa) due to the paucity of longitudinal study designs. Furthermore, none of the identified studies assessing the relationship between body image disturbance and self-esteem tested for interaction effects based on sexual orientation, which, as we noted, presents unique considerations.

The second, direct pathway has also been supported through studies that showed GBMSM who display internalized homophobia, anticipate stigma and rejection for being gay, and have experienced antigay physical assault are more dissatisfied with their bodies than those who lack those experiences (Kimmel and Mahalik 2005; Williamson and Hartley 1998). A study of sexual minority women found that experiences of heterosexism (e.g., workplace and school discrimination, homophobic harassment, and rejection) significantly predicted disordered eating symptoms ($r = .14$), whereas internalized heterosexism predicted body surveillance ($r = .17$) and body shame ($r = .14$) (Watson et al. 2015).

Minority stress theory offers an explanation for why body image disturbance is observed even among GBMSM who are only minimally involved or feel connected to a gay community. Critically, it moves away from a purely social explanation of the phenomenon and the implication that GBMSM merely “impose” body image disorders on one another. Instead, it examines the role of larger cis-hetero-patriarchal society in producing adverse mental health outcomes through historical and systematic persecution of 2SLGBTQ+ populations. In the process, it rejects the premise that non-heterosexual identities and behaviours are inherently pathological, which has historically been wielded to justify their marginal status through an essentialist, medicalizing logic.

The Femininity, Masculinity, and Polarization Hypotheses

For several decades, researchers have entertained the possibility that sex/gender-based disparities in disordered eating are a function of constructed gender identity and practice rather than essential sex differences (Boskind-White and White 1986), but only recently have the implications of this notion for men been explored. Lakkis et al. (1999) observed that gay men displayed greater rates of body dissatisfaction and dietary restraint than heterosexual men did, whereas lesbians scored significantly lower than heterosexual women on body dissatisfaction, drive for thinness, dietary restraint, and bulimia nervosa. Moreover, it was shown that the variance between men in terms of body-image related outcomes is better explained by gender expression than by sexual orientation, whereas the inverse is true for women. Finally, for both men and women, irrespective of sexual orientation, a greater presence of characteristics that are associated with normative constructions of femininity and carry a negative connotation (e.g., passivity, dependence, unassertiveness) predicted greater disordered eating symptoms. We argue that these results lend support for the femininity hypothesis, which claims that for men and women disordered eating is linked to adherence with hegemonic feminine gender practice (Boskind-White and White 1986).

Evidence in support of the femininity hypothesis has been mixed. A meta-analysis of 25 studies assessing the relationship between gender role orientation and body-related outcomes in men found that prior to adjusting for sexual orientation, adherence to feminine norms was not significantly associated with eating pathology, body dissatisfaction, and muscle dissatisfaction. After adjusting for sexual orientation, it was found that femininity was associated with lower muscle dissatisfaction in heterosexual men but not gay men. Greater adherence to masculine norms, on the other hand, was associated with reduced eating pathology and greater overall body satisfaction, but was also positively associated with muscle dissatisfaction in particular (Blashill 2011). These findings contrast with previous reviews, which found that femininity was positively associated with eating pathology (Murnen and Smolak 1997). Blashill (2011) notes that this inconsistency may indicate that femininity's relationship to body dissatisfaction is more salient for women than it is for men. Together, these findings appear to contradict the femininity hypothesis as it is applied to men. Interestingly, however, Blashill's (2011) findings seem to indicate that adherence to masculine gender practice offers protection against body image-related pathology. He speculates this is due to the traits that are associated with traditional masculinity (e.g., assertiveness, dominance, autonomy), which foster greater self-esteem and concomitant body satisfaction (see Whitley 1983, for a meta-analysis). At the same time, adherence to traditional masculinity may promote dissatisfaction directed specifically toward muscularity, likely as a consequence of cultural

scripts that conflate normative constructions of masculinity with muscularity. One could interpret this as meaning it is not femininity per se that increases men's risk of body image disturbance and disordered eating, but rather the manner in which they negotiate their gendered identities in the context of hegemonic masculinity. It may be more appropriate, therefore, to speak in terms of a masculinity hypothesis to describe this phenomenon.

A compelling inference may be drawn from the masculinity hypothesis in light of evidence demonstrating increased rates of gender nonconformity among sexual minority men (Bailey and Zucker 1995; Rieger et al. 2008): Sexual orientation-based differences in body-image related pathology may be due to differences in adherence to gender norms. French et al. (1994) originally posed this explanation when they found that only 65% of their 119 self-identifying lesbian and gay participants and less than half of their 275 bisexual participants reported any previous sexual experiences with persons of the same gender. They reason the observed sexual orientation-based differences in body image and weight and shape control behaviours could not solely be due to sociocultural processes because many respondents were too young and inexperienced to have been sufficiently acculturated. Because many GBMSM display gender-nonconforming behaviour in childhood and adolescence, they speculate this hypothesis may be more appropriate. Indeed, Strong et al. (2000) found that after controlling for childhood gender nonconformity, differences in body dissatisfaction between gay and heterosexual men became non-significant. Furthermore, in-group analysis revealed "high feminine" gay men had greater body dissatisfaction than "less feminine" gay men.

If it is, in fact, gender conformity (i.e., for men, deviance or adherence to hegemonic masculinity) that is associated with body image disturbance, rather than the presence of femininity, it would be inappropriate to suggest femininity itself is predisposed toward body image disturbance and that its prevalence among gay men explains why their rates of disordered eating approach women's. Instead, it appears that gay men, who more frequently deviate from hegemonic masculinity, may experience gender-based stigma and violence that precipitates body image issues (Kimmel 1997; Sandfort et al. 2007). The distinction between the femininity and masculinity hypotheses, therefore, lies in how gender is theorized. On the one hand, the femininity hypothesis is contingent on an essentialist model that posits the existence of universal, "natural" characteristics associated with womanhood. The masculinity hypothesis, on the other hand, highlights the constructed nature of sex and gender by suggesting that the hegemonic masculine subject is consolidated through acts of signification, like outward displays of misogyny and homophobia (Butler 1990; Kimmel 1997).

Some posit that in addition to being at least partly responsible for gender- and sexual orientation-based differences in rates of body image disturbance, gender role orientation is also

implicated in the observed qualitative differences in body image ideals between men and women. The polarization hypothesis argues that men's and women's ideal body images occupy symbolically opposite extremes as part of an ideological project to sustain complementary, mutually exclusive, and binary gender norms (Mishkind et al. 1986). Ample evidence exists of differing body image ideals between men and women. Overall, men desire to be heavier and more muscular than their current shape, whereas women wish to be smaller and thinner (Furnham et al. 2002; Oehlhof et al. 2009). Other studies have shown bimodal responses from men, with some wanting to be smaller and others wanting to be larger (Varnado-Sullivan et al. 2006). These differences in men's body preferences may be based on the extent to which they adhere to traditional masculinity, as well as cultural and geographical differences in how masculinity is constructed. Multiple regression analysis revealed conformity to masculine norms predicted muscle dissatisfaction and muscularity-oriented disordered eating, but not body fat dissatisfaction and thinness-oriented disordered eating in a sample of 246 heterosexual men (Griffiths and Murray 2015). GBMSM similarly display a desire for both thinness and muscularity (Kaminski et al. 2005), but GBMSM may be more likely than heterosexual men are to be concerned with thinness (Calzo et al. 2015). Other studies found that gay men indicated a greater drive for muscularity than both heterosexual men and women (Yelland and Tiggemann 2003). In the same vein as Strong et al.'s (2000) study, future research should examine whether gender conformity mediates the relationship between sexual orientation and body image preferences.

The masculinity hypothesis suggests not only that gender and body aesthetics are inextricably linked, but also that the association is animated by social and cultural forces, such as stigma. Wood (2004) notes that GBMSM experience gender-based discrimination not only from heterosexual men and women, but also from other gay men, who as a collective lack as strong a tradition of critically analyzing intragroup gender-inflected power relations compared to feminist and lesbian cultures. The masculinity hypothesis thus presents potential links to sociocultural perspectives, as greater integration to gay communities may yield body image disturbance by way of gender stigmatization. Research with preadolescent boys shows an association between childhood gender nonconformity and dysthymia, somatoform disorder, and anxiety (Coates and Person 1985; Sreenivasan 1985), likely as a result of gender-based abuse, not inherent pathology (Roberts et al. 2012). This provides an additional link between the masculinity hypothesis and minority stress theory.

As an aside, we caution readers against interpreting the aforementioned conclusions drawn from the masculinity hypothesis to mean either that (a) gender nonconformity is an essential feature of same-gender attraction or (b) gender nonconformity is in itself a psychopathology or product of

developmental aberrance. Numerous scholars have documented at length how these positions were advanced by heterosexist medicalizing discourses to justify the systemic persecution and cultural marginalization of sexual and gender minorities. (See Hekma 1994, for a critical and historical analysis of the "gender inversion" theory of homosexuality and Fausto-Sterling 2000, for a discussion of medicine's and sexology's roles in constructing a pathological etiology for same-gender attraction and gender nonconformity.)

Class III Theories—Impact of Social Media on Body Image

Transactional Model of Social Media and Body Image Concerns

Given social media's pervasiveness in our everyday lives, comparatively little research has been undertaken to investigate their health-related effects. Perloff (2014) sought to address this gap by developing a theoretical model based on social psychological and communications perspectives that describes the impact of social media on body image and disordered eating. He first characterized five key attributes that distinguish contemporary social media from conventional mass media. First, social media are seen as interactive—users are simultaneously sources, distributors, and receivers of information, whereas they are mostly passive viewers with other media forms. Second, and by extension of the previous feature, users feel a greater sense of autonomy and personal agency over the media they consume. Third, social media channels are more personal outlets, evidenced through the ability to customize website features and upload individual writings, images, and videos. Fourth, social media platforms use various modalities to immerse individuals in psychologically engaging ways that promote suspension of belief and attitude change. Finally, social media platforms tend to target specific demographics and connect like-minded users; unlike mass media, which aims to appeal to as wide and heterogeneous a base as possible, social media are in essence media of one's peers (Perloff 2014).

Using a multipartite transactional model of social media and body image concerns, Perloff (2014) contends that social media do not unidirectionally cause body image disturbance, but in the presence of individual predisposing factors and when mediated by certain psychosocial processes, they can have deleterious effects. These individual vulnerability factors, which render certain people particularly susceptible to social media's influence on body image, include low self-esteem, depression, and perfectionism. These factors would be expected to have a greater influence on body image when they co-occur with appearance-related concerns, such as internalization of the thinness ideal and centrality of appearance to

self-worth. Individual vulnerability factors in part determine people's motivations for using social media in the first place. Perloff (2014) suggests those who are low in self-esteem and high in thin-ideal internalization, or high in both perfectionism and appearance-based self-worth, are more likely to seek gratifications from social media such as validation and reassurance regarding their physical attractiveness and escape from body image-related distress.

The links between resulting social media uses (e.g., Facebook, Twitter, Instagram) and attitudinal and behavioural outcomes are mediated by a number of psychosocial processes. Perloff (2014) identifies three mediating processes: social comparison, narrative-induced transportation, and normative processes. Narrative-induced transportation is the process of immersion by audiences into the narrative constructed within a text. Texts become more believable when they involve feasible plots and characters with whom audiences may more readily identify. Texts that successfully transport individuals render them more inclined to adopt the text's world-view, effectively rendering them more receptive to persuasion (Green and Dill 2013). Normative processes involve perceptions of peers' normative concerns (i.e., beliefs about what body shapes others consider acceptable) and meta-beliefs about how others are influenced by media (Perloff 2009). Finally, it is suggested that a positive feedback loop exists whereby those whose body image and weight and shape control behaviours have been negatively impacted by their social media use rely further on social media to derive validation and reassurance from peers. This, in turn, intensifies the processes of social comparison, transportation, and normative influences, resulting in even greater body image disturbance and exacerbated disordered eating (Perloff 2014).

A nascent body of research confirms the fundamental association between social media and body image upon which the transactional model aims to detail a mechanistic explanation. A systematic review of 20 studies investigating the associations among SNS use, body image, and disordered eating found that overall, these factors were correlated (Holland and Tiggemann 2016). Some studies went beyond comparing SNS users and non-users to determine whether an association exists between body image-related outcomes and specific activities and features relevant to SNS use. These studies found that those who spent more time on MySpace and Facebook and more frequently checked their profiles displayed greater body surveillance, more frequently made appearance comparisons, had greater body dissatisfaction, and more frequently displayed disordered eating symptoms (Fardouly and Vartanian 2015; Mabe et al. 2014; Tiggemann and Slater 2014; Vandenbosch and Eggermont 2012). Body image disturbance and disordered eating also have been shown to be positively associated with one's degree of engagement with SNSs, measured by number of Facebook friends (Kim and Chock 2015; Tiggemann and Slater 2014). Those who shared more photos, viewed others' photos more frequently, and

more often engaged with others' posted content (through likes, comments, etc.) had a greater likelihood of basing their self-worth on their appearance, endorsing thin ideals, and displaying weight dissatisfaction (Kim and Chock 2015; Meier and Gray 2014).

Importantly, it has recently been shown that the association between social media use and body dissatisfaction seen mostly among young women and female adolescents is generalizable to GBMSM. For example, a study with a nationwide U.S. sample of 2733 sexual minority men revealed small but statistically significant positive correlations between frequency of SNS use (across a number of platforms, including Facebook, Instagram, Snapchat, and dating apps) and body dissatisfaction, eating disorder symptoms, and thoughts about using anabolic steroids. When body dissatisfaction was disaggregated into body fat, muscularity, and height dissatisfaction, it was found that muscularity dissatisfaction was more consistently associated with SNS use across a variety of platforms than the other two outcomes. Moreover, the associations between both muscularity dissatisfaction and eating disorder symptoms with social media use was stronger for image-centric (e.g., Instagram, Snapchat) than non-image-centric (e.g., Wordpress) platforms (Griffiths et al. 2018).

Several of the more direct pathways proposed by Perloff (2014) also have received support, including depression and social media use (Lin et al. 2016); low self-esteem and social media use (Mehdizadeh 2010); and media consumption, social comparison, and appearance dissatisfaction (Engeln-Maddox 2005). Some pathways have yet to be verified, such as the interactive effects of perfectionism and centrality of appearance to self-worth on social media use and the mediational effects of transportation and normative influences on social media use and body image.

The transactional model provides a useful analytic scheme for organizing the various predictive factors of body image disturbance, as well as how they may be applied, when modelling the impact of social media on body image. Like previous frameworks, however, the model was informed mostly by evidence involving White, heterosexual female adolescents and young adult women, and the author makes no claim that the framework may be extrapolated to GBMSM. It therefore excludes any constructs that are unique to these populations, such as minority stress, 2SLGBTQ+ community integration, and gender conformity.

The Online Disinhibition Effect

Researchers have observed that people more frequently display disinhibited social behaviour or engage in uncivil discourse online compared to their usual offline selves. These behaviours include, but are not limited to, name-calling (mean-spirited or disparaging comments directed at a person or group of people), aspersion (derision aimed at an idea, plan, or behaviour), lying,

vulgarity, and pejorative comments for speech (deriding individuals for how they communicate) (Coe et al. 2014). Suler (2004) coined the online disinhibition effect to describe this tendency to behave in a comparatively uninhibited manner online. He draws a distinction between benign disinhibition (e.g., showing extraordinary candor, generosity or helpfulness) and toxic disinhibition (e.g., showing extraordinarily hateful, critical, uncouth or threatening behaviour), while noting the two often overlap and can be difficult to parse in certain contexts. He then details a number of features unique to the online social environment that may promote disinhibited behaviour. These include: (a) dissociative anonymity—the ability to partially or completely obscure one’s identity by withholding or fabricating personal identifiers, effectively producing a compartmentalized “online self” that is separately accountable from their in-person selves; (b) invisibility—the lack of physical presence that makes it difficult, if not impossible, to detect body language or paralinguistic cues that may telegraph discomfort or other emotions that steer a conversation; (c) asynchronicity—the temporal delay between sending messages and receiving feedback that results in less immediate consequences for committing faux pas, leading to “emotional hit and runs” (Suler 2004, p. 168); (d) solipsistic introjection—the words of other online users become internalized into one’s psyche, leading readers to subconsciously believe they are talking to themselves; (e) dissociative imagination—the belief that the online and offline worlds are independent and carry separate and unrelated consequences for actions; and (f) attenuated status and authority—the absence of visual cues which makes it difficult to identify authority figures, leading users to view experts and others who would usually elicit deference to be treated like peers.

Quantitative evidence in support of Suler’s (2004) primary contention—that incivilities occur more frequently online—is middling and scattershot across various academic disciplines, but seems to overall outnumber disconfirming evidence. Experimental data indicate that “flaming”—counterproductive and aggressive forms of communication like insults and swearing—occurs more frequently in text-based computer-mediated communication than both videoconferencing and face-to-face communication (Castellá et al. 2000). An observational study of U.S. youth also found heavy internet use (exceeding 3 h per day) was significantly associated with experiencing repeated cyberbullying (Juvonen and Gross 2008). It appears not only that antagonistic interlocution occurs more frequently online, but also that this observation is at least partly explained by online disinhibition. In a survey of 887 Japanese high school students, logistic regression analysis revealed those who reported higher levels of online disinhibition were 20% more likely to have cyberbullied others in the previous 6 months (Udris 2014).

Studies that aimed to verify Suler’s (2004) proposed predictors of online disinhibition are more equivocal in their conclusions. Whereas Spears et al. (2002) found that anonymity in computer-mediated communication resulted in more flaming

than did face-to-face communication, Douglas and McGarty (2001) concluded that anonymous posts on internet news boards were no more likely to be hostile than those posted by identifiable users. Likewise, a content analysis of blogs found that users who were more visually identified (i.e., used pictures of themselves in their profiles), disclosed more, not less, private information in their blog entries (Hollenbaugh and Everett 2013). Lapidot-Lefler and Barak (2012) suggest the mixed findings in this space are partly due to a tendency to conflate anonymity with other predictors of online disinhibition, such as invisibility and lack of eye-contact. In their experimental study, where participants were presented with a hypothetical dilemma to resolve in pairs via online chat, anonymity and invisibility each exerted a significant main effect for one measure only (issuing threats and creating a general air of toxicity, respectively). Lack of eye-contact, on the other hand, exerted main effects on negative online disinhibition, flaming, and threats. As well, four significant interactive effects were observed, all of which involved eye-contact. The authors contend anonymity assumes different definitions depending on the communication environment and may therefore be better understood as a composite measure—renamed online sense of identifiability—that factors in availability of personal information, visibility, and eye-contact.

We conjecture that the online disinhibition effect could partly explain why GBMSM so frequently engage in appearance conversations. A narrative review of correlates and outcomes of fat talk—disparaging comments made about one’s own weight or body shape—found that despite being a normative experience in Western culture, fat talk is widely considered socially undesirable behaviour (Shannon and Mills 2015). Although we lack evidence to indicate as much, we do not think it too far-fetched to speculate making comments about *others’* appearance is perceived as being equally, if not more objectionable, than self-deprecating fat talk. In this sense, disinhibited online behaviour could be seen as a variable that mediates the association between social media use, sociocultural perspectives, and body image-related outcomes—if community integration is associated with body image disturbance among GBMSM by way of appearance conversations, one may speculate that disinhibited online behaviour resulting in appearance conversations accounts partly for the association between social media use and body image disturbance in GBMSM. For this to be the case, further research will need to ascertain whether (a) appearance conversations are considered uncivil or antisocial behaviour, (b) online disinhibition promotes appearance conversations, and (c) online disinhibition mediates the link between social media use and appearance conversations.

Developing an Integrated Model of Social Media and Body Image for GBMSM

The purpose of the present paper was to develop, from existing theory, a model that may be used to explain how

GSN apps and social media influence body image and weight and shape control behaviours in GBMSM. Alone, none of the aforementioned theories satisfactorily captures the complex array of interrelated psychosocial factors underpinning social media’s relationship with body image in GBMSM. Overall, Class I theories fail to take into account how social processes may vary for sexual minorities. For example, it has been shown that the ideal self for GBMSM is not always smaller and thinner—a preference which is more or less taken for granted with heterosexual women. Class II theories, on the other hand, have generally under-acknowledged the critical role social media and other internet technologies play in GBMSM’s social dynamics, both historically and contemporarily. If community engagement is one of the primary drivers for body image disturbance in GBMSM, more focus should be directed on the digital platforms that facilitate community-building (and for many young GBMSM, are the first and likely most impactful form of exposure to such communities). Finally, Class III theories do not consider how patterns and motivations for social media use, as well as social dynamics on social media platforms, may differ for GBMSM. Gender-nonconforming gay men, for instance, are prone to harassment and discrimination that may motivate them more so than heterosexual women to seek affirmation from social media.

See Fig. 1 for our proposed integrative model. We opted to use the transactional model of social media and body image concerns as our conceptual anchorage point for the remainder of the model. We believe that for a model detailing the impact of social media on body image among GBMSM, pathways detailing social media effects should be central rather than

peripheral. For this reason, our model is better understood as an extension of Perloff’s (2014) transactional model than as a new model outright. Remaining Class I, II and III theories and their constituent constructs were re-conceptualized as either extensions or modifiers of individual vulnerability factors or mediating processes. We distill the central points of the model in the following sections.

Individual Vulnerability Factors

We retain Perloff’s (2014) posture that individual vulnerability factors increase one’s likelihood of seeking affirmation and validation from social media. Among his examples, however, we suggest rethinking thin-ideal internalization as normative appearance ideal internalization because GBMSM’s ideal body image is comparatively more bifurcated and because appearance ideals differ, even among heterosexual women. We have also added minority stress, gender nonconformity, and adherence to hegemonic masculinity as potential vulnerability factors because all three have been linked to different forms of body image disturbance and mood disorders. A perceived discrepancy between one’s actual, ideal, and ought selves may also be considered a vulnerability factor because it too is linked with body image disturbance and adverse mental health outcomes. Self-discrepancy has also been shown to mediate the negative effect of Instagram use on body satisfaction (Ahadzadeh et al. 2017). Moreover, the ideal and ought selves determine whether one internalizes a thin or muscular body ideal. As the polarization hypothesis predicts, ideal and

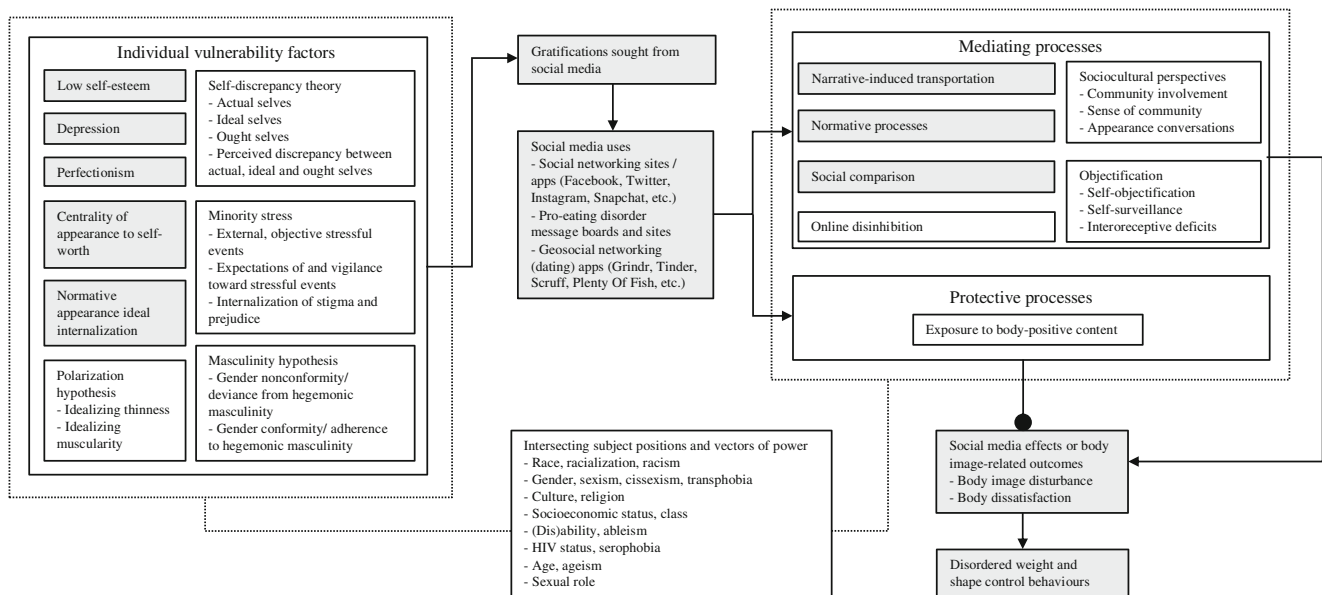


Fig. 1 Proposed integrative model detailing the impact of social media and related information technologies on body image-related outcomes among GBMSM. Constructs originally from Perloff’s (2014) transactional model are shaded. Triangular arrow endpoints denote promotive

pathways or positive correlations; circular arrow endpoints denote inhibitory pathways or negative correlations. Dotted lines denote a positive or negative relationship dependent on specific intersecting subject positions, individual vulnerability factors and mediating/protective processes

ought selves vary based on conformity to normative gender practice.

We leave the remaining pathways in Perloff's (2014) transactional model intact: Individuals' pursuit of validation drives them to use social media, which through mediating processes results in adverse body-image related outcomes and disordered weight and shape control behaviours. Individuals seek to remedy their body dissatisfaction through further social media immersion, and a feedback loop ensues. Data from Griffiths et al. (2018) suggest GSN apps and other dating websites impact body image to a similar extent as non-dating social networking sites, so we included them alongside Facebook, Instagram, and pro-eating disorder message boards.

Mediating Processes

For our revised model, we also chose to retain all mediating processes proposed by Perloff (2014)—social comparison, narrative-induced transportation, and normative processes—because we have no reason to suspect GBMSM's psychosocial tendencies differ from those of heterosexual women in such a way that they would no longer apply. If anything, we conjecture that social comparison in particular may be of greater salience for GBMSM. Because body image ideals diverge across gendered lines, same-sex attracted persons may be more likely than their heterosexual counterparts are to view their current or potential sexual/romantic partners' appearance ideals to be commensurate with their own. Consequently, to a greater extent than heterosexuals, GBMSM may perceive individuals to whom they are attracted as being aesthetically similar to themselves and therefore as relevant targets for comparison. In effect, this provides GBMSM an additional appearance pressure separate from popular media images, peers, and family. In support of this notion, Legenbauer et al. (2009) found that among gay men—but not heterosexual men or women—internalization of the thin ideal predicts preference for a thin partner. This suggests that GBMSM uniquely exhibit a link between erotic tendencies and personal body image ideals. Moreover, although a review of experimental studies shows men experience greater body dissatisfaction when exposed to idealized images of male bodies (Blond 2008), the few studies that have explored the impact of images of women on men's body image and self-esteem reveal no statistically significant relationship (Hargreaves and Tiggemann 2002, 2003), indicating that congruence in gendered embodiment is precursory to establishing relevant targets for comparison.

This is not to say, of course, that GBMSM and their partners always have concordant idealized views of their own body. Within GBMSM, body image ideals can differ as a function of gender conformity, as we previously discussed. Evidence indicates they can also vary according to one's

preferred role in penetrative anal sex. Moskowitz and Hart (2011) found that tops, or those who mostly adopt the insertive sexual role, view themselves as more masculine than bottoms, or those who mostly adopt the receptive role, and that masculinity was highly related with weight, height, hairiness, muscularity, and erect penis size. For that matter, it is also possible that individuals' preferred sexual role moderates the effect of appearance- and eating-related discourses on body image and weight and shape behaviours. A widespread belief among GBMSM is that bottoms need to adopt specific dietary habits to ensure hygienic sex, such as consuming large amounts of fibre and avoiding dairy, coffee, and foods high in sugar or fat (Lopes 2018; Maille 2019). Memes (widely-spread internet content) that are circulated on social media broach this topic from a comedic angle, but sometimes seem to tacitly endorse restricted fasting and other behaviours commonly associated with disordered eating. Tops may be comparatively less susceptible to any adverse effects of this type of messaging because they likely perceive it to be less relevant to themselves.

It is also plausible that the impact of social comparison on body image among GBMSM is more pronounced on gay-oriented GSN apps than traditional SNSs. Such apps tend to host a more homogenous userbase in terms of gender identity and sexual orientation compared to sites like Facebook and Instagram (Badal et al. 2018), which may increase perceived similarity among users and exacerbate the effects of social comparison. Individuals also more frequently make upward comparisons on social media when comparing themselves to celebrities, close friends, and distant peers, but not family members (Fardouly and Vartanian 2015). Upward comparisons may therefore occur more frequently on gay dating apps, where users are less likely to encounter and interact with family members than on Facebook or other SNSs.

Finally, it is worth mentioning that not all comparisons made on social media will be based on user-generated content. Across most platforms, native advertisements and sponsored content have increased in frequency over the past several years. Facebook and Instagram have reportedly maximized their "ad load" on their main content feeds—in other words, reached a point where further increasing the ratio of advertisements to user-generated content would reduce engagement and limit revenue growth (Levy 2019). A portion of comparisons made on social media may therefore resemble in target, direction, and motive those made in the context of traditional mass media (Hargreaves and Tiggemann 2009). If anything, models depicted in advertisements on social media compared to mass media may be perceived more often by users as relevant targets for comparison because ads are algorithmically curated based on users' characteristics (e.g., age, sex/gender), location, and activities on other webpages.

In addition to those originally proposed by Perloff (2014), we added objectification as a mediating process in light of recent evidence indicating that self-objectification moderates

the relationships between social media-related behaviours with body shame and disordered eating symptomatology (Cohen et al. 2018; Manago et al. 2015). Similar to social comparison, a corollary of objectification theory—that interpersonal objectification is primarily perpetuated by men—suggests that objectification acutely impacts GBMSM on gay dating apps. Because gay dating apps are populated mostly by men seeking other men for sexual or romantic endeavours, use of these apps should be associated with greater self- and other-objectification. Indeed, recent quantitative evidence shows that current Grindr users are more likely to objectify other men than GBMSM who are not using Grindr (Anderson et al. 2018).

We also classified sociocultural approaches as a mediating process. It is conceivable that the dominant cultural milieu among gay men that enshrines a rigid set of body ideals, evinced by the link between community integration and body image issues, bears at least some resemblance to the cultural norms that proliferate in online communities. It would also be reasonable to assume that appearance conversations, which occur more frequently among GBMSM and are linked with body image disturbance, occur online as well as in person. As previously mentioned, appearance conversations may be more likely to take place online due to online disinhibition.

Protective Processes

In his original model, Perloff (2014) focuses almost exclusively on the pathways through which social media adversely impact body image and weight and shape control behaviours. We do not dispute the importance of these pathways, given most research indicates a deleterious relationship between social media use and body image, but it may be useful to consider mediating as well as potential moderating processes—that is, those that could influence the strength or direction of the relationship between social media use and body satisfaction in GBMSM. One such moderator that could conceivably mitigate or reverse social media's usually harmful impact is exposure to content on social media that emphasizes body positivity. As Sastre (2014) notes, under the auspices of the broader “body positive movement,” there has, in the past few years, been a proliferation of content on social media and more static internet webpages dedicated to nurturing unconditional bodily acceptance and critical awareness of the cultural normalization of thin bodies. The body positive movement is said to have developed from previous movements, like those for fat acceptance, which focus explicitly on raising awareness of and challenging fat stigma and discrimination (Cooper 2008). Unlike these initiatives, however, Sastre (2014) argues that the body positive movement's objectives are relatively nebulous and its intervention strategies scattershot. In this sense, it more closely resembles a series of loosely related

philosophical positions than an organized political movement. Nevertheless, key messages include the harms associated with normative constructions of beauty, the need for more diverse corporeal representation in media, and the moral value inherent in bodies of all shapes and sizes (Sastre 2014).

Recent articles from 2SLGBTQ+ popular media suggest that the body positive movement has expanded to capture the interest of GBMSM, who are becoming increasingly cognizant of their shared vulnerability to the harmful effects of comparisons made with others who depict normative body image ideals on social media (Baker 2019; Feldman 2019; Villarreal 2019). One approach body-positive advocates are using to combat the problem is introducing competing imagery on social media that highlights larger features and that frames them as beautiful and desirable. Empirical evidence indicates there may be merit to this strategy. Consistent with previous research, Clayton and colleagues (Clayton et al. 2017) found that women's exposure to images of their ideal body type (i.e., thin) resulted in decreased body satisfaction. More interestingly, however, body satisfaction also linearly increased as the models depicted in images further deviated from the thin ideal, such that viewing plus-size models had the most positive impact on body satisfaction. Participants also engaged in greater social comparison when viewing images of their ideal body type compared to those considered less ideal, suggesting body-positive messaging that features plus-size models protects against body dissatisfaction by disincentivizing social comparison. In light of these findings, we have opted to label exposure to body-positive content as a protective process.

Intersecting Subject Positions

Our previous discussion of how gender conformity impacts body image and vulnerability to the adverse effects of social media use should illuminate that GBMSM are not a monolithic entity with uniform lived experiences. Intersectional frameworks were developed with the specific aim of understanding these sorts of intragroup complexities, and it is for this reason that we also employ them here. Although Kimberlé Crenshaw is often credited with first coining the phrase “intersectionality” in her 1991 work “Mapping the Margins: Intersectionality, Identity Politics, and Violence Against Women of Color” (Crenshaw, 1991), Collins and Bilge (2016) argue this only marks the point at which the framework began to gain formal acceptance within the academy. Intersectionality's core tenets were articulated, albeit using a different vocabulary, by African American women in social movement settings as early as the 1960s.

Importantly, there is not one singular definition of intersectionality to explicate; rather, ideas associated with the framework are deployed differently across research, activist and organizing contexts. That said, recurring themes include

notions that (a) social inequality is rarely caused by a single factor, and instead is based on interactions among various technologies or axes of power (e.g., racism, sexism, heterosexism, classism); (b) individuals' identities or subject positions are always a result of multiple technologies of power that interact in multiplicative, rather than additive, ways; (c) technologies of power which shape subject positions are mutually constitutive (e.g., racism and heterosexism are animated and reinforced by one another); (d) power relations should be analyzed at their intersections as well as across domains of power (e.g., cultural, interpersonal, structural); and (e) efforts should be directed to redressing a historical inattentiveness to how lived experiences vary within any given social category based on other categories of difference (Bowleg 2012; Collins and Bilge 2016; Nash 2008).

Himmelstein and colleagues (Himmelstein et al. 2017) note that intersectional frameworks have heretofore been underutilized in body image research, much to the detriment of the field, because it remains largely unclear how social identities intersect to determine vulnerability to body image-related issues. Most quantitative research investigating predictors of body image disorders, like weight stigma, are based on samples that are 70–95% White (Vartanian and Porter 2016), and sociodemographic characteristics like race/ethnicity, sexual orientation, age, and socioeconomic status are often treated as control variables instead of being considered meaningfully as potential interaction terms (Himmelstein, Puhl & Quinn, 2017). This points to issues of both inappropriate statistical analysis and inadequate sample heterogeneity with regard to sociodemographic characteristics. The current state of the body image literature is also a case in point of intersectionality's critique that scholarly work involving marginalized populations often assumes a mutual exclusivity of social categories, thereby reinforcing assumptions that certain categories have "default" states (e.g., Whiteness among GBMSM or heterosexuality among racial/ethnic minority persons) or that some categories are subordinated to others in shaping subject positions. For example, most studies investigating ethno-racial differences in body image disorders do not consider interactions with sexual orientation (Ricciardelli et al. 2007), and inversely, a majority of studies conducted with GBMSM ignore the issue of race altogether (Kaminski et al. 2005; Yelland and Tiggemann 2003). As a result, there is presently a dearth of empirical evidence elucidating how intersecting vectors of power and attendant subject formations specifically impact body image among GBMSM that we may use to inform the current theoretical model.

In the absence of this type of evidence, we can provisionally resort to studies involving bivariate analyses of independent sociodemographic characteristics to get an idea of which correlates of body image pathology may be affected, by which characteristics, and in what direction *across* GBMSM. Ricciardelli et al. (2007) conducted a review of the literature

and found that compared to White men, Black men were more likely to prefer a larger body on themselves, less likely to consider themselves overweight, and overall had a more positive body image. Latino men, on the other hand, reported no statistically significant differences in body image compared to White men, and the results from Asian men were too divergent to draw any conclusions. It is evident from these results that race and ethnicity impact what Perloff (2014) and ourselves have labelled vulnerability factors (i.e., normative appearance ideal internalization and perceived discrepancy between actual, ideal and ought selves), but variation across races is too great to suggest in broad strokes that not being White affords either protection or vulnerability.

Similarly, it has been shown that U.S. Black women are less likely than Asian and White women to perceive mainstream standards of beauty as being relevant to themselves, and when exposed to images that depict this ideal, are more likely to identify with in-group standards (Evans and McConnell 2003). This suggests that race also influences psychosocial mediating processes, like social comparison. Associations between other categories of difference, vulnerability factors, and mediating processes have been found, including but not limited to those between socioeconomic status and depression (Stansfeld et al. 1997); lipodystrophy (abnormal body fat distribution) in HIV-positive men with depression and body image disturbance (Blashill et al. 2014); age and importance placed on appearance (Peat et al. 2008); and acquired mobility disability and importance placed on appearance (Yuen and Hanson 2002).

To depict the strength and direction of the linear associations among all possible social categories and variables included in the current model would yield a prohibitively convoluted schematic and, indeed, could be seen as betraying the sensibilities of the *anticategorical* methodological strand in intersectionality research, which is dedicated to deconstructing, rather than rigidifying, analytic categories (McCall 2005). For simplicity purposes, the main points we emphasize here are that (a) various intersecting subject positions can conceivably modify the vulnerability factors and mediating processes pertinent to how social media impact GBMSM's body image and (b) quantitative research has inadequately explored these intersections specifically among GBMSM.

Hypothesis Verification and Other Directions for Future Research

In Fig. 2 we further disaggregate our proposed additions to individual vulnerability factors into their individual constructs and elucidate the specific pathways through which they may result in increased social media use. From the masculinity hypothesis, minority stress theory, and self-discrepancy

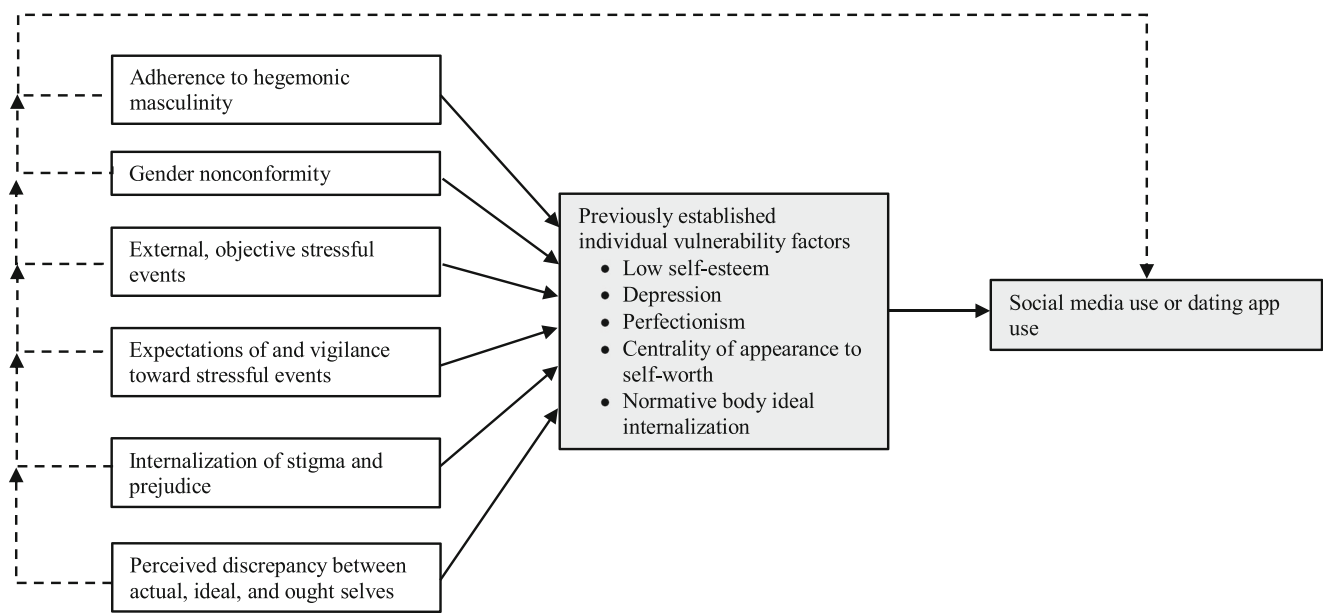


Fig. 2 Proposed pathways for additions to individual vulnerability factors. Class I and II theories are disaggregated into their constituent constructs. Constructs originally from Perloff’s (2014) transactional model are shaded. All arrows included here use triangular endpoints to denote

promotive pathways or positive correlations. Solid lines denote pathways that have been verified by quantitative evidence; dashed lines denote pathways that have yet to be verified by quantitative evidence

theory, we derived the following constructs: adherence to hegemonic masculinity; gender nonconformity; external, objective stressful events; expectations of and vigilance toward stressful events; internalization of stigma and prejudice; and perceived discrepancy between actual, ideal and ought selves. All of the aforementioned have been shown to be associated with at least one of Perloff’s (2014) previously proposed vulnerability factors and, therefore, could be seen as at least indirectly encouraging social media use. However, none have

hitherto been linked directly to social media use in quantitative studies, thus presenting opportunities for future research.

Similarly, in Fig. 3 we disaggregate the theories that we suggest should be added as mediating/protective processes (sociocultural approaches, objectification, online disinhibition and body positivity) into their individual constructs to examine how they may explain the link between social media use and body image-related issues. Quantitative evidence verifies that this link is mediated by the objectification pathway

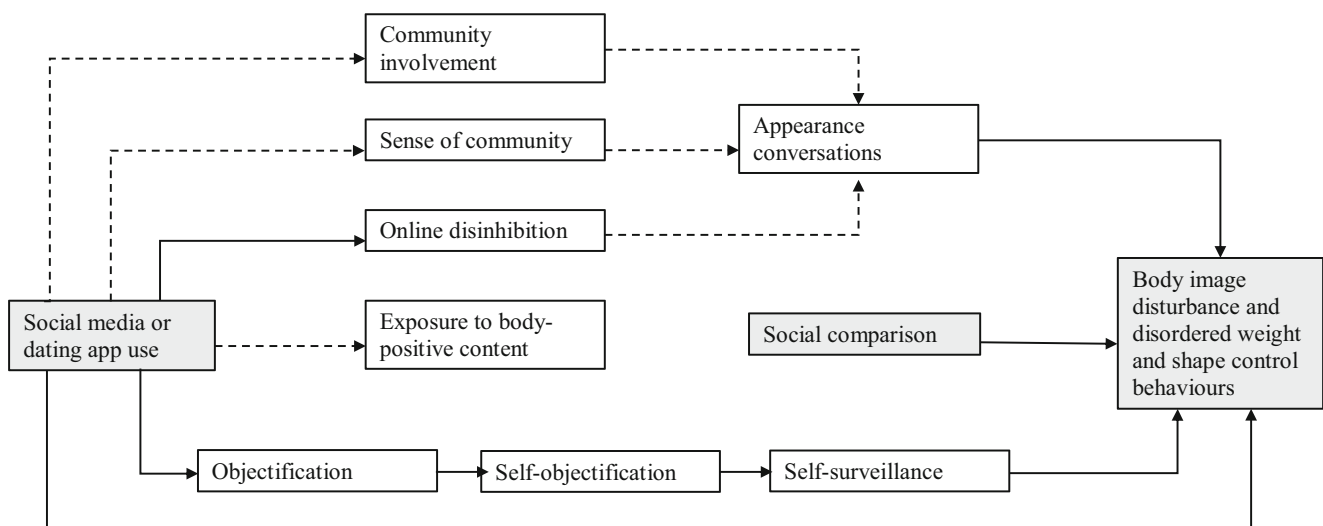


Fig. 3 Proposed pathways for additions to mediating processes. Class I, II, and III theories are disaggregated into their constituent constructs. Constructs originally from Perloff’s (2014) transactional model are shaded. Triangular arrow endpoints denote promotive pathways or positive

correlations; circular arrow endpoints denote inhibitory pathways or negative correlations. Solid lines denote pathways that have been verified by quantitative evidence; dashed lines denote pathways that have yet to be verified by quantitative evidence

(interpersonal objectification to self-objectification to self-surveillance). Although appearance conversations have been shown to be related to body image disturbance, and social media use encourages disinhibited behaviour, it remains unclear if and how community involvement, sense of community, and online disinhibition are related to appearance conversations. Likewise, although exposure to body-positive content has been shown to protect against body dissatisfaction by reducing social comparison, it is still unknown what elements of social media use predict exposure to this type of content.

Besides verifying these hypotheses, several other knowledge gaps remain. Perhaps foremost, only one known study (Griffiths et al. 2018) has tested whether the link between social media use and body image disturbance is generalizable to GBMSM. Additional studies should be conducted to see whether these findings hold in different populations. This study was also cross-sectional in nature; longitudinal studies should be considered in the future to establish temporality and directionality. Additionally, most studies involving social media have focused only on Facebook. The SNS and app markets have shifted dramatically since the mid-to-late 2000s as platforms like Instagram, Twitter, and Snapchat rose to prominence. It is still unclear if the relationship between social media use and body image disturbance varies between social media platforms and, if so, to what platform-specific features those differences can be attributed.

Griffiths et al. (2018) found that image-centric platforms more strongly impact body image, but it is unclear what exactly makes an SNS image-centric. Although Twitter used to be considered text-centric, for instance, it currently more closely resembles a multimedia platform. For that matter, dating websites and apps have also not been disaggregated and compared in terms of their impact on body image. It remains to be seen whether Grindr more adversely impacts body image and self-esteem than, say, GROWLr, an app targeted specifically toward “bears” (larger, hairier GBMSM). Future research should extend beyond comparing users to non-users and investigate associations between body image disturbance in GBMSM and app-specific behaviours, such as frequency and duration of use, representations in profile pictures, profile description content, intentions for app use, and number of apps used simultaneously.

Practice Implications

Our expanded model can offer key insights to inform the design of health promotion initiatives aimed at reducing the burden of body image disturbance and disordered eating among GBMSM. For example, the substance and delivery of social marketing campaigns should be grounded in a thorough understanding of how social media and other information technologies are uniquely situated in the lives of their

target demographic. Messaging that advocates curbing overall social media and dating app use could be well-received by heterosexual women, but GBMSM may find this directive to reflect a lack of cultural sensitivity and/or competence, given internet-mediated communication has served a unique historical role for this group in circumventing the social, cultural, and political barriers to forming connections in public spaces.

The notion that social media use does not uniformly result in body image issues, underscored by the myriad vulnerability factors and mediating/protective processes identified in our model, also points to the potential ineffectiveness of this generic messaging. Any attempt to reduce social media use among all GBMSM would require overlooking that some are at minimal risk of body image issues and, indeed, could even benefit from protective factors like body-positive content. Instead, health promotion strategists should focus on identifying those most vulnerable (e.g., individuals who are low in self-esteem, experience greater minority stress, and to a greater extent have internalized normative appearance ideals) and patterns in use that are most harmful (e.g., engaging in upward comparisons, interacting with others who perpetuate weight stigma in appearance conversations) and orient their interventions accordingly.

Conclusion

The present paper is the first known to offer a theoretical framework detailing how social media and other information technologies influence body image and weight and shape control behaviours in GBMSM. Our findings make clear that body image disturbance and eating pathology among sexual minority men result from a broad and complex array of inter-related biological, psychological, social, and cultural determinants. Uncovering a simple causal mechanism increasingly seems idealistic, especially because matters are further complicated by digital technologies and sexuality, but a more thorough understanding of the many risk factors at play will be required for effective treatment and prevention strategies targeted toward this vulnerable population.

Compliance with Ethical Standards

Conflict of Interest None.

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